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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/706,955

11/14/2003

Myung-Ho Kyung

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7776

21171

7590

09/28/2005

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EXAMINER

BEATTY, ROBERT B

ART UNIT

PAPER NUMBER

2852

DATE MAILED: 09/28/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/706,955

Applicant(s)

KYUNG ET AL.

Examiner

Robert Beatty

Art Unit

2852

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 14 November 2003.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-16 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1,2 and 8-16 is/are rejected.
- 7) ☒ Claim(s) 3-7 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____

1. Claims 5-6 are objected to because of the following informalities:

In claims 5-6, the terms "transparent portions" and "opaque portions" lacks proper antecedent basis. It is believed that these claims should depend from claim

3. Appropriate correction is required.

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

2. Claims 14 and 16 are rejected under 35 U.S.C. 102(b) as being anticipated by Yamazaki (JP# 11-249449).

Yamazaki teach an image forming apparatus for forming a plurality of color images, transferring them to an intermediate transfer belt B1 and finally transferring them to a recording sheet. The image forming apparatus has a photoconductive drum 10 on which latent images are formed and a plurality of developing devices 20K, 20M, 20C, 20Y for forming toner images onto the photoconductive drum wherein the developed toner images are transferred to the intermediate transfer belt. A photo-detector position sensor 41a, 41b detects an opaque 1b and transparent 1a section in the transfer belt to determine the position of the belt and for determining when image forming processes (such as latent image

formation) should begin. The opaque and transparent portions are considered the "error prevention section". The opaque and transparent portions can have an opaque or transparent tape 2 or 3 between them. A detected pattern (i.e. blocked photo-detector light / transmitted photo-detector light) such as shown in Figs 3a or 4a will be a signal to determine the position of the belt. A machine translation is attached.

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

3. Claims 1-2,8-13,15 are rejected under 35 U.S.C. 103(a) as being unpatentable over Nishimura (JP# 05-35124) in view of Morikoshi (JP# 04-345457) and Shimomura (JP# 2001-350348).

Nishimura teach an image forming apparatus having a photoconductive belt 24, a plurality of developing units 43-46 for developing latent images on the photoconductive belt with toner, an intermediate transfer belt 30 (or 51) for receiving the transferred images, and a finally transferring the images on the transfer belt to a recording sheet (see Fig.2). The intermediate transfer belt 51 has an position index hole 55 which is detected via a photo-emitter / photo-detector

Art Unit: 2852

arrangement in order to control the timing of various image forming processes such as forming the latent images onto the photoconductor. A Mylar film 52,53 reinforce the intermediate transfer belt and as seen in Fig. 6, can cover the index hole.

Specifically, Nishimura teach everything claimed except the intermediate transfer belt being made of polycarbonate alloy (PC alloy) and an error prevention section which transparent being inserted into the position index hole which is the same thickness as the intermediate transfer belt.

Morikoshi teach a belt for use in an image forming apparatus wherein the belt comprises a base layer 1, reinforcing transparent tapes 4,5 on both sides of the base layer, a hole 2 in the base layer which is used in conjunction with a photo-sensor and a transparent sheet 3 (error prevention section) inserted into the hole. Shimomura teach an image forming apparatus using an intermediate transfer belt 10 made from an alloy of a thermoplastic polycarbonate. It would have been obvious to one of ordinary skill in the art at the time the invention was made to provide the index hole of Nishimura with a transparent sheet inserted in the hole because a crack around the hole can be prevented as taught in Morikoshi. It further would have been obvious to one of ordinary skill in the art at the time the invention was made to make the base material of the intermediate transfer belt from an alloy of polycarbonate because the belt can have good strength which resists bending as taught in Shimomura.

4. Claims 3-7 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

5. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

Sacki, Osada et al., Genovese, Bach et al., and Kuriyama (JP) all teach various belt with hole position sensors.

6. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Robert Beatty whose telephone number is (571) 272-2130. The examiner can normally be reached on M-F from 9 to 6.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Arthur Grimley, can be reached on (571) 272-2136. The fax phone number for the organization where this application or proceeding is assigned is (703) 872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>.

Application/Control Number: 10/706,955

Page 6

Art Unit: 2852

Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

A handwritten signature in black ink, appearing to read "Robert Beatty", with a long horizontal line extending from the end of the signature towards the right margin.

Robert Beatty
Primary Examiner
Art Unit 2852

September 27, 2005